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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,845	04/09/2004	Kwan-Hee Lee	1514.1037	8679

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WASHINGTON, DC 20005

EXAMINER

HINES, ANNE M

ART UNIT	PAPER NUMBER /
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2879

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/820,845

Applicant(s)

LEE, KWAN-HEE

Examiner

Anne M. Hines

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-23 is/are pending in the application.
- 4a) Of the above claim(s) 16-21 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 is/are allowed.
- 6) ☒ Claim(s) 10, 12-15, 22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on November 13, 2006, has been entered and acknowledged by the Examiner.

Claims 1-10 and 12-23 are pending in the instant application.

Claims 16-21 are currently withdrawn from consideration as directed to a non-elected invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10, 12-13, 15, and 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Cok (US 6831407).

Regarding claim 10, Cok discloses an organic electroluminescent display device comprising a substrate having a plurality of pixel regions (Fig. 8, 20; Column 5, line 32); lower electrodes formed in the corresponding pixel regions, and having substantially planar upper surfaces (Fig. 8, 16; Column 5, line 46); buffer patterns formed between the substrate and the corresponding lower electrodes (Fig. 8, 24; Column 5, line 42);

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pixel define layers disposed between adjacent pairs of the lower electrodes and having upper surfaces (Fig. 8, 24'—located above 24 and between 16 although not labeled in Fig. 8, a corresponding layer is shown in Fig. 2; Column 3, line 7); organic thin film layers formed on the corresponding lower electrodes (Fig. 8, 12; Column 5, lines 48); and an upper electrode formed on the pixel define layer and the organic thin film layers (Fig. 8, 14; Column 5, line 48), wherein the upper surface of each of the pixel define layers is substantially coplanar with or lower than upper surfaces of the corresponding adjacent lower electrodes due to the corresponding buffer pattern (Fig. 8).

Regarding claim 12, Cok further discloses wherein each buffer pattern smoothes a difference in step differences between adjacent pairs of the lower electrode and the step difference of the corresponding pixel define layer and has a thickness which is determined according to thicknesses of the lower electrode and the pixel define layer (Fig. 8, 16 & 24 & 24'; see explanation of layer 24' in claim 10 rejection).

Regarding claim 13, Cok further discloses wherein each buffer pattern includes an organic insulation film or an inorganic insulation film (Column 3, line 5). Note that since all materials must be either organic or inorganic, the Examiner considers Cok's disclosure of an insulation film to anticipate the requirements of claim 13.

Regarding claim 15, Cok further discloses wherein the lower electrode is ITO (Column 2, lines 40-43; Column 6, lines 36-43 and lines 54-57).

Regarding claim 22, Cok discloses an organic electroluminescent display device comprising a substrate (Fig. 8, 20; Column 5, line 32); a substantially planar first electrode formed to a first height above the substrate (Fig. 8, 16; Column 5, line 46); a

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pixel define layer formed to a second height above the substrate to define the first electrode within a corresponding pixel without covering a portion of the first electrode (Fig. 8, 24'—located above 24 and between 16 although not labeled in Fig. 8, a corresponding layer is shown in Fig. 2; Column 3, line 7); a second electrode (Fig. 8, 14; Column 5, line 48); and an emitting layer disposed between the first and second electrodes (Fig. 8, 12; Column 5, lines 48), wherein the first height is substantially the same as or greater than the second height (Fig. 8).

Regarding claim 23, Cok further discloses a buffer pattern disposed between the substrate and the first electrode, wherein a combined thickness of the buffer pattern and the first electrode is substantially the same as or greater than a thickness of the pixel define layer (Fig. 8, 24; Column 5, line 42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cok (US 6831407) in view of Fujita et al. (US 6758538).

Regarding claim 14, Cok teaches the invention of claim 10, including the insulating buffer and pixel define patterns, but is silent regarding either the method of manufacturing or materials of the insulating patterns.

In the same field of endeavor of insulating layers, Fujita teaches a photosensitive polyamide resin as suitable for forming patterned insulating layers through photolithography for an organic electroluminescent device (Column 11, lines 14-18) in order to provide a patterned insulating film between the thin film transistor and electroluminescent layers (Column 8, line 61 to Column 9, line 3).

It would have been obvious to one of ordinary skill in the art to modify the invention of Cok to have both the pixel define layer and buffer layer patterned through photolithography, since both insulating layers are formed before the organic emitting layers, which prevents any deleterious effects from the photolithography process on the organic emitting layers, and to have the composition of the insulating layers be a photosensitive polyamide resin in order to pattern the layer through photolithography and to choose from one of the materials disclosed by Fujita, since Fujita teaches the suitability of using an insulating layer, patterned through photolithography, formed of a photosensitive polyamide resin for insulating layer of an organic electroluminescent device formed before the organic emitting layers and it has been held to be within the general skill of an artisan to select a known material on the basis of the intended use. See MPEP 2144.07.

Allowable Subject Matter

Claims 1-9 are allowed.

Regarding independent claim 1, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 1, and

specifically comprising the limitation wherein in an organic electroluminescent display a lower electrode has a substantially planar upper surface at a first step difference above the substrate, a pixel define layer covers one portion of the lower electrode and exposes another and has an upper surface at a second step difference above the substrate, and the second step difference is less than or substantially equal to the first step difference.

Regarding claims 2-9, claims 2-9 are allowable for the reasons given in claim 1 because of their dependency status from claim 1.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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